

SECTION 05 2100

STEEL JOIST FRAMING

LANL MASTER SPECIFICATION

When editing to suit project, author shall add job-specific requirements and delete only those portions that in no way apply to the activity (e.g., a component that does not apply). To seek a variance from applicable requirements, contact the ESM Structural POC.

When assembling a specification package, include applicable specifications from all Divisions, especially Division 1, General Requirements.

Delete information within "stars" during editing.

Specification developed for ML-3 projects. For ML-1 / ML-2, additional requirements and QA reviews are required.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Steel joists and accessories.
- B. Shop applied finishes and field applied touchup.

1.2 DESIGN REQUIREMENTS

- A. Design joists, bridging and accessories as indicated on Drawings.
- B. Design joists, bridging and accessories with Steel Joist Institute (SJI) Standard Specifications.
- C. Design joists for uniform loads, axial loads, concentrated loads, uplift loads and end moments as indicated on Drawings.
- D. Design joists and bridging for uplift loads in accordance with SJI Technical Digest #6.

1.3 SUBMITTALS

- A. Submit the following in accordance with Section 01 3300, Submittal Procedures:
 - 1. Shop drawings indicating standard designations, configuration, sizes, spacing, and location of joists, bridging and accessories.
 - 2. Calculations demonstrating conformance, sealed by a registered Professional Structural Engineer.

3. Certificate of compliance stating that all joists conform to the requirements of the Steel Joist Institute.
4. Welders' certifications in accordance with AWS D1.1 for welders who will perform field welding.

1.4 QUALITY ASSURANCE

- A. Conform to SJI Standard Specifications, Load Tables, and Weight Tables.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle steel joists:
 1. With equipment of adequate capacity.
 2. Without overstressing or permanently deflecting material.
 3. Without damaging finish.
- B. Deliver manufactured material in original unopened packages, containers, or bundles with manufacturer's label intact and legible.
- C. Store materials off ground, under cover, and away from damp surfaces.
- D. Remove damaged, unlabeled or unsatisfactory materials which do not meet this specification from job site.

PART 2 PRODUCTS

2.1 MATERIALS

Structural engineer will specify materials

- A. Provide open web joist members conforming to SJI Type [K-Series.] [LH Longspan.] [DLH Deep Longspan.] [Joist Girders.]
- B. Provide bolts, nuts and washers conforming to ASTM [A307.] [A325]
- C. Provide shear stud connectors conforming to ASTM A108, grade 1015 forged steel, headed, uncoated, size as shown on Drawings.
- D. Provide welding materials in accordance with AWS D1.1 for type of materials being welded.
- E. Provide primer conforming to SSPC 15, Type 1 red oxide.

2.2 FABRICATION

- A. Fabricate steel joists in accordance with SJI Standard Specifications including headers and other supplementary framing.
- B. Weld in conformance with SJI Standard Specifications.

2.3 FINISHING

- A. Perform finishing work in accordance with SJI Standard Specification.
- B. Do not prime surfaces that will be in contact with concrete, field welds, fireproofing, and bolting with high strength bolts.

PART 3 EXECUTION

3.1 ERECTION

- A. Erect steel joists in accordance with SJI Standard Specifications.
- B. Provide bearing for joists on supports in accordance with SJI or as shown on the Drawings.
- C. [Field weld] [Bolt] steel joists to bearing plate as shown on the Drawings.
- D. Weld in accordance with AWS D1.1.
- E. Install high strength bolts in accordance with AISC Specification for Structural Joints using ASTM A325 or ASTM A490 bolts.
- F. During erection, provide temporary bracing for induced loads and stresses.
- G. Do not permit erection of decking until joists are braced.
- H. Do not field cut or alter joists without approval of LANL Construction Inspector.
- I. After erection, prime any unprimed welds, abrasions, and surfaces. Use primer specified in Part 2.

3.2 ERECTION TOLERANCE

- A. Erect steel joists to the tolerances specified in the SJI Standard Specification.

END SECTION

Do not delete the following reference information:

FOR LANL USE ONLY

This project specification is based on LANL Master Specification 05 2100 Rev 0, dated January 6, 2006.